

DRAFT

Marshall I. Diggs

Conservation Area

Fifteen-Year Area Management Plan

FY 2017-2031



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OVERVIEW

- **Official Area Name:** Marshall I. Diggs Conservation Area, #5705
- **Year of Initial Acquisition:** 1957
- **Acreage:** 1,014
- **Counties:** Audrain, Montgomery
- **Division with Administrative Responsibility:** Wildlife
- **Division with Maintenance Responsibility:** Wildlife
- **Statements of Purpose:**
 - A. **Strategic Direction**

Manage for wildlife, aquatic, woodland, and grassland resources with emphasis on woodland and grassland natural community restoration and compatible recreational opportunities.
 - B. **Desired Future Condition**

The desired future condition of Marshall I. Diggs Conservation Area (Diggs CA) is a healthy forest, woodland, and grassland complex.
 - C. **Federal Aid Statement**

NA

GENERAL INFORMATION AND CONDITIONS

- I. **Special Considerations**
 - A. **Priority Areas:** None
 - B. **Natural Areas:** None
- II. **Important Natural Features and Resources**
 - A. **Species of Conservation Concern:** Species of conservation concern are known from this area. Area Managers should consult the Natural Heritage Database annually and review all management activities with the Natural History Biologist.
 - B. **Caves:** None
 - C. **Springs:** None
 - D. **Other:** Occurs in the Central Missouri Savanna/Woodland Dissected Plain Landtype Association. This landtype is a flat to gently rolling dissected plain at the northern edge of the outer Ozark border. Historically, the area was oak savanna and woodland in the valleys and mostly prairie on the flat ridges. (Nigh & Schroeder, 2002)
- III. **Existing Infrastructure**
 - One pavilion
 - One stone monument

- Two Americans with Disabilities Act (ADA)-accessible privies with concrete parking areas
- Eight parking lots
- Two fishing lakes: Lake Whitesell (13 acres) and Lake Walter (7 acres)
- Two ADA-accessible concrete boat ramps
- Thirteen fishless ponds
- Dry hydrant at Lake Walter
- Camping area, no amenities

IV. Area Restrictions or Limitations

A. Deed Restrictions or Ownership Considerations: None

B. Federal Interest: Federal funds may be used in the management of this land. Fish and wildlife agencies may not allow recreational activities and related facilities that would interfere with the purpose for which the State is managing the land. Other uses may be acceptable and must be assessed in each specific situation.

C. Easements: None

D. Cultural Resource Findings: No known cultural resources.

E. Endangered Species: None observed.

F. Boundary Issues: None

MANAGEMENT CONSIDERATIONS

V. Terrestrial Resource Management Considerations

Diggs CA has stands of remnant prairies that are managed with fire, inter-seeding of native forbs, and the treatment of invasive species. The southwest corner of the area has responded well to management efforts. Invasive species, while present, are not abundant and should be kept from spreading. Crop fields are being systematically converted to native vegetation while the thinning and burning of the woodlands has shown positive results.

Challenges and Opportunities:

- 1) Manage the grass and woodland communities in a manner to produce high quality examples of such communities that are worthy of designation in the Missouri Natural Areas program.

Management Objective 1: Stimulate the growth of native plants and to control woody sprouts in the woodland acres.

Strategy 1: Use management tools including but not limited to prescribed fire, chemical application, and mechanical removal to stimulate the growth of native plants and to control woody sprouts in the woodlands. (Wildlife)

Strategy 2: Alternate spring, summer, and fall prescribed burns on a three-to-five-year rotation to improve diversity and plant species composition. (Wildlife)

Management Objective 2: Convert remaining cropland acres to grasses and forbs by FY21.

Strategy 1: Contract with permittee farmer to grow soybeans the year before fields are to be planted to native grasses and forbs. (Wildlife)

Strategy 2: Acquire seed native to the region by trade, collection, or purchase. (Wildlife)

Strategy 3: Plant native seed in the winter months when soil conditions allow. (Wildlife)

Management Objective 3: Reduce current basal area of woodland stands to 40 to 80 square feet of residual basal area. Refer to the forest inventory that was conducted in 1997 for the species and condition of trees to remove.

Strategy 1: Thin woodlands using a variety of techniques including hiring contractors and using staff. (Wildlife)

Strategy 2: Write Special Use Permits for firewood cutters. (Wildlife)

Strategy 3: Conduct a forest inventory as scheduled for FY22. (Forestry)

Strategy 4: Utilize Best Management Practices to maintain soil, water and visual integrity. (Wildlife)

Management Objective 3: On appropriate sites, manage woodland communities to provide healthy and diverse habitats for forest/woodland-dependent wildlife.

Strategy 1: Conduct inventories on forest/woodland compartments according to the inventory schedule to develop prescriptions for ecological and silvicultural treatments. (Forestry)

Strategy 2: Utilize a variety of sustainable forest management techniques to promote healthy woodland communities including, but not limited to, timber harvesting, forest stand improvement, firewood cutting, salvage cuttings, tree planting, seeding and prescribed burning. (Forestry)

Strategy 3: Maintain a diversity of tree age classes that will provide both a diversity of wildlife habitat as well as resiliency to living and non-living (fire, weather, and climate) damaging agents. (Forestry)

Strategy 4: Utilize Best Management Practices during timber harvest as described in the Department's manuals: *Missouri Watershed Protection Practice* manual (Missouri Department of Conservation, 2014) and the *Missouri Forest Management Guidelines Voluntary Recommendations for Well-Managed Forests* (Missouri Department of Conservation, 2014) (Forestry)

Management Objective 4: Control invasive species.

Strategy 1: Monitor for the presence of invasive forest pests and plants. (Wildlife)

Strategy 2: Control invasive plants and pests as needed. Techniques used to control such problem include but are not limited to chemical control of sericea lespezea, mechanical cutting of autumn olive and bush honeysuckle, and chemical treatment of woody stumps to prevent resprouting (Wildlife)

VI. Aquatic Resource Management Considerations

Diggs CA includes approximately 2.5 miles of stream frontage for six perennial streams. Area streams include three first-order streams (1.2 miles), two second-order streams (0.3 miles), and one third-order stream (1 mile). Little Loutre Creek is the area's principal stream resource with 1 mile of frontage that bisects the area from northwest to southeast. It supports a diverse fish community that is indicative of its Prairie Faunal Region. The streams on Diggs CA drain land that is primarily forests, grassland, and crop fields.

Lake Walter (7 acres) and Lake Whitesell (13 acres) provide fishing opportunities at Diggs CA. Management activities include stocking fish, controlling aquatic vegetation, improving area access, and physically or chemically renovating the lakes.

The remaining ponds on the area were built as water sources for wildlife and are each less than 0.5 acres in size. These small shallow ponds are managed as fishless ponds to benefit amphibians and other wildlife.

Challenges and Opportunities:

- 1) Manage fish populations in two lakes on the area.
- 2) Maintain fishless area ponds for wildlife watering and semi-aquatic wildlife use.
- 3) Control nuisance aquatic plants in ponds designated for fishing.
- 4) Maintain and enhance forested riparian corridors.
- 5) Manage area streams to maintain their water quality and diverse fish fauna.

Management Objective 1: Manage fish populations and provide public fishing opportunities in ponds large enough to support fishing.

Strategy 1: Conduct periodic (every three years or as needed) electrofishing surveys to assess the fish population in Lake Walter and Lake Whitesell. (Fisheries)

Strategy 2: Maintain fish habitat structures in fishing ponds to enhance the fishery. (Fisheries)

Strategy 3: Maintain public access to fishing ponds through vegetation management around ponds. (Wildlife)

Strategy 4: Provide periodic stocking of 8-12" channel catfish to maintain population densities. (Fisheries)

Management Objective 2: Manage all fishless waters on the area to benefit amphibians and other wildlife.

Strategy 1: Ponds incapable of supporting quality fisheries will be chemically renovated and maintained as fishless for amphibians, reptiles, and other wildlife. (Fisheries)

Management Objective 3: Treat nuisance aquatic plants in fishing ponds as needed.

Strategy 1: Use appropriate chemical, biological, or mechanical methods (depending on the plant coverage and species being controlled) to control nuisance aquatic plants in fishing ponds. (Fisheries)

Management Objective 4: Establish and maintain a riparian corridor of trees along stream drainages.

Strategy 1: Maintain a forested corridor through natural regeneration or plantings along streams, where needed, to widen the existing riparian corridor to a functional and protective width. First- and second-order streams should have a riparian corridor width of 50 feet on each side of the stream, and all other streams should have a minimum corridor width of 100 feet. (Wildlife)

Strategy 2: All management activities should follow the *Watershed and Stream Management Guidelines for Lands and Waters Managed by the Missouri Department of Conservation* (Missouri Department of Conservation, 2009). (Wildlife)

Management Objective 5: Manage stream resources to maintain and enhance their water quality and diverse fish populations.

Strategy 1: Develop and implement management recommendations for area streams with excessive erosion or nutrient loading. (Fisheries)

VII. Public Use Management Considerations

Challenges and Opportunities:

- 1) Provide hunting, fishing, and nature viewing opportunities.
- 2) Maintain area in a condition that invites public use.

Management Objective 1: Provide for hunting, fishing, and viewing opportunities.

Strategy 1: Conduct annual management activities that will provide for a diversity of species. (Wildlife)

Management Objective 3: Maintain the area in a desirable condition.

Strategy 1: Continue maintenance contract with private contractors. (Wildlife)

Strategy 2: Remove hazardous trees and trim overhanging brush from trails as needed. (Wildlife)

Strategy 3: Maintain accurate area information and regulations through the Conservation Atlas database, area brochures, and posted information. (Wildlife)

VIII. Administrative Considerations

Challenges and Opportunities:

- 1) Maintain area infrastructure at current levels.
- 2) Consider land acquisitions, when available.

Management Objective 1: Maintain area infrastructure at current levels.

Strategy 1: Maintain area infrastructure in accordance with Missouri Department of Conservation (Department) guidelines. (Wildlife)

Lands Proposed for Acquisition:

When available, adjacent land may be considered for purchase from willing sellers. Tracts that improve area access, provide public use opportunities, contain unique natural communities or species of conservation concern, or meet other Department priorities, as identified in the annual Department land acquisition priorities, may be considered.

APPENDICES

Area Background:

From 1940 to 1955 Mr. Marshall Diggs bought 610 acres from eight landowners, which he sold to the Department for one dollar in 1958. That same year, the Wellsville Fire Brick Company donated 160 adjoining acres and another 80 acres were purchased from the Gibbs family for \$18.72 an acre. Nineteen acres were purchased in 1978 from Otto and Margaret Schnarr for \$14,500 and in 1981, 145 acres were purchased from the A. P. Green Refractories Company for \$85,000. In total, 1,014 acres were acquired over 23 years for \$100,998.50 for an average of \$99.31 per acre.

Aerial photographs from April 1963 show Walter and Whitesell lakes, eroded fields, and far fewer trees than exist at present. Early management efforts were focused on reducing soil erosion, improving soil fertility, constructing watering ponds, and planting for wildlife food and cover. The 1964 Area Plan (Terrill, 1964) describes in detail how fields should be strip planted in various food and cover crops to maximize rabbit and quail production.

Current management efforts used to improve the natural communities include enhancing remnant grasslands and woodlands, converting crop fields to native vegetation; treating invasive species with herbicides; collecting and inter-seeding forb seeds; thinning woodlands; and using prescribed fire on a landscape scale.

Current Land and Water Types:

Land/Water Type	Acres	Miles	% of Area
Forest/Woodland	753		74
Native Prairie	168		17
Crop Land	30		3
Old Field	27		3
Lake/Ponds	20		2
Infrastructure	9		1
Grassland (non-prairie)	7		<1
Total	1,014		100
Stream Frontage		1.3	

References:

Nigh, T. A., & Schroeder, W. A. (2002). *Atlas of Missouri ecoregions*. Jefferson City, MO: Missouri Department of Conservation.

Terrill, H. V. (1964). *Management plans for the Marshall I. Diggs Wildlife Area*. Jefferson City, MO: Missouri Department of Conservation.

Missouri Department of Conservation. (2014). *Missouri watershed protection practices recommended for Missouri forests: 2014 management guidelines for maintaining forested watersheds to protect streams*. Jefferson City, MO: Conservation Commission of the State of Missouri.

Missouri Department of Conservation. (2014). *Missouri forest management guidelines: voluntary recommendations for well-managed forests*. Jefferson City, MO: Conservation Commission of the State of Missouri.

Missouri Department of Conservation. (2009). *Watershed and stream management guidelines for lands and waters managed by Missouri Department of Conservation*. Jefferson City, MO. Missouri Department of Conservation.

Maps:

Figure 1: Area Map

Figure 2: Aerial Photo

Figure 3: Land Cover Types

Figure 1: Area Map

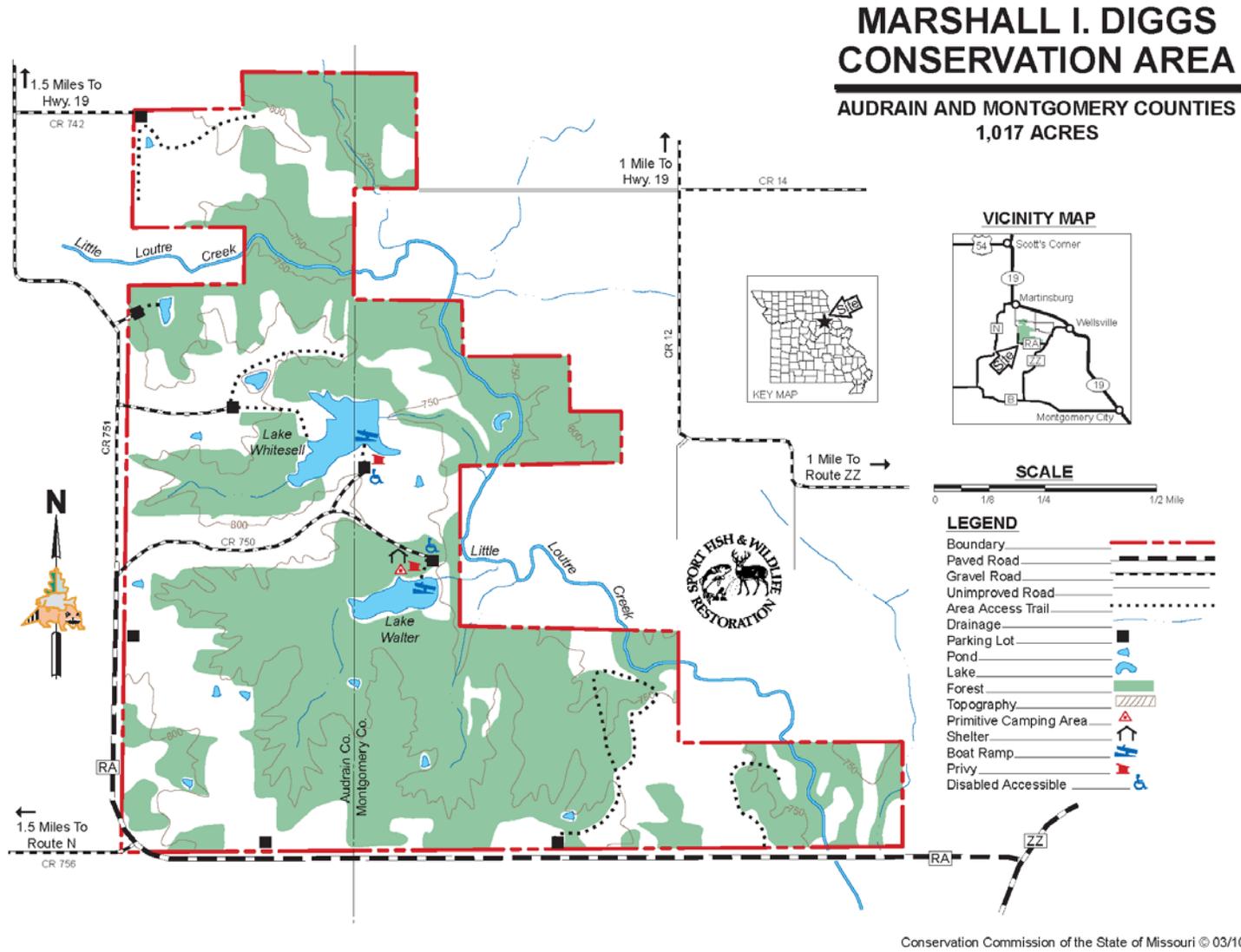


Figure 2: Aerial Photo

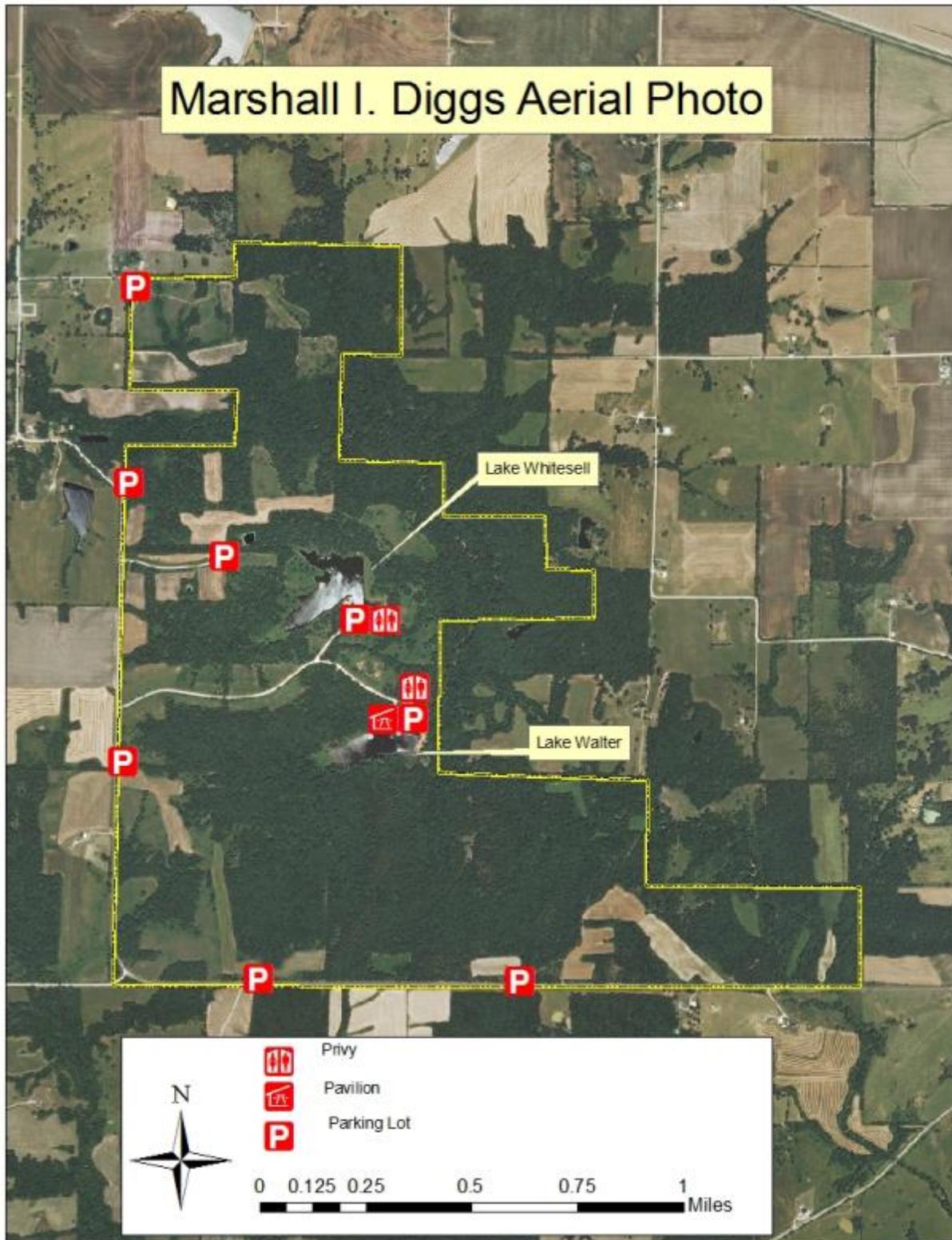
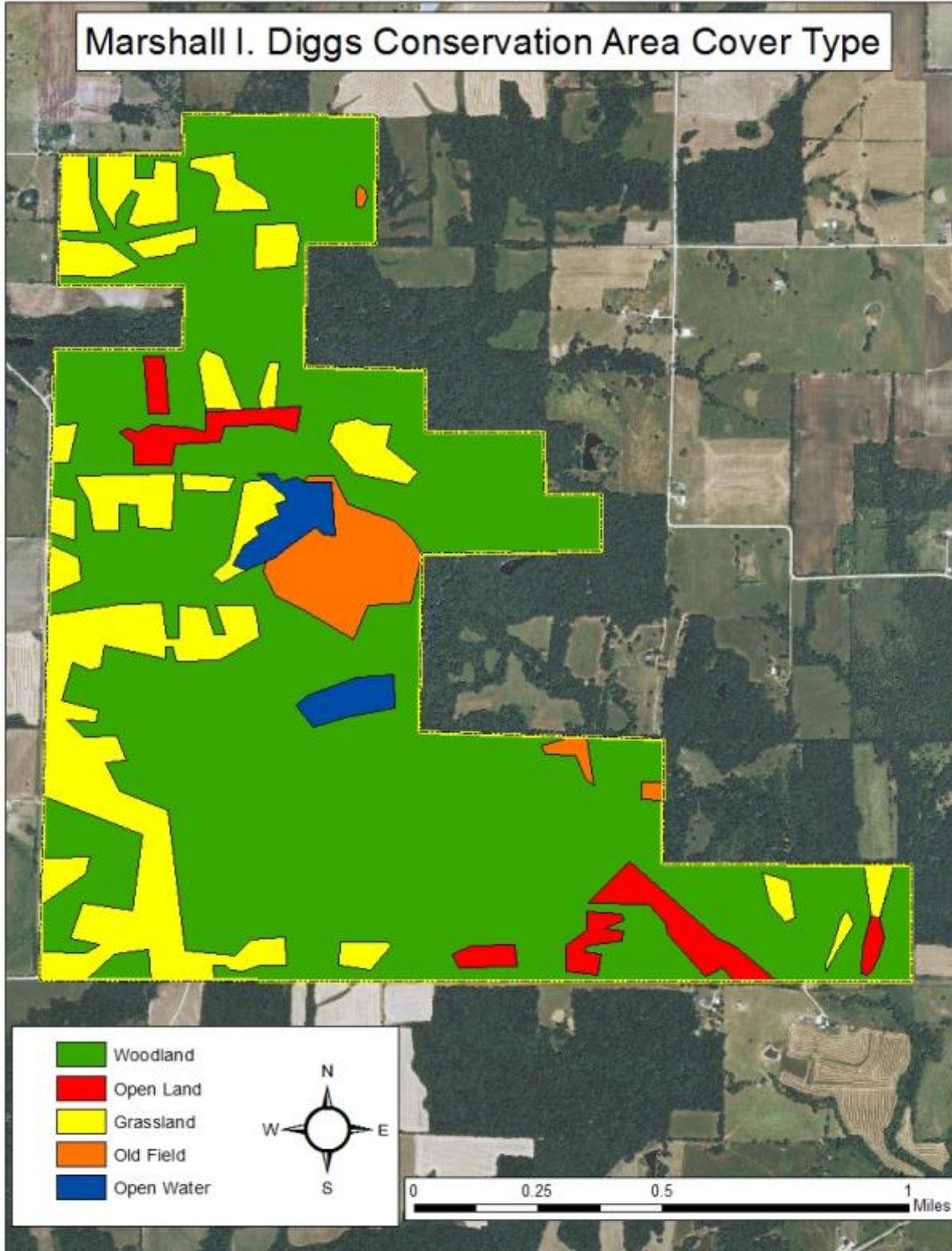


Figure 3: Land Cover Types



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